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ABSTRACT

Guidelines are provided for the development of a community college course in critical thinking. The first sections offer an overview of the nature and basic concepts of critical thinking, indicating that: (1) the skills developed in critical thinking classes include the ability to formulate a clear statement of a thesis or problem, evaluate evidence in accordance with the canons of inductive and deductive logic, view a particular problem in a larger context, and generate alternative hypotheses in relation to the problem; (2) during their college years, students advance through phases characterized by basic dualism, relativism, and commitment; (3) classes should take into account students' subjective input and the conceptual, perceptual, and largely subjective impact of language; and (4) deductive and inductive logic serve as analytical tools for critical thinking. The final sections contain suggestions for introducing critical thinking skills in developmental classes. Organizational suggestions stress the value of small group work, the completion of initial assignments in class, and required attendance. A course description is presented next, covering attendance and grading policies and providing a brief outline of course objectives and content. Finally, a list of 12 student assignments is provided. (AJL)

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L.A.N.D. CRITICAL THINKING WORKSHOP
WITH APPLICATIONS FOR DEVELOPMENTAL STUDENTS

by

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JC 880 592

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L.A.N.D Critical Thinking Workshop
With Applications for Developmental Students
John K. Wilson - Mott Community College

I. Nature of Critical Thinking

To borrow a definition from Robert Ennis of the Illinois Critical Thinking Project, critical thinking can be defined as "reasonable thinking that is focused on deciding what to believe or do." The required skills form the basis of reasonable thought. Critical thinking classes seek to develop the following skills:

1. Formation of a clear statement of the thesis or problem.
2. An evaluation of evidence in relation to the problem that is in accord with the canons of inductive and deductive logic.
3. A willingness to see the particular problem or issue in a larger context.
4. The ability to generate alternative hypotheses in relation to the problem.

Critical thinking seeks to gain an understanding of an issue or problem, rather than the mere memorization of someone else's solution. In addition, critical thinking is usually classified as being either "weak" or "strong." Weak critical thinking refers to the ability to apply critical thought within a particular subject or for a particular conclusion. As an example, Wernher von Braun certainly was capable of critical thought within the area of physics, but he probably was just as content working for Hitler as he would have been working for someone else. Strong sense critical thinking refers to the willingness to apply critical thought across life concerns.

II. Conceptual Stuff

i. Overall

Perry (Forms of Intellectual and Ethical Development in the College Years) concluded that students go through a series of steps during their college years. An abbreviation of Perry's suggested progression can be stated as follows:

A. Basic Dualism

In this phase the student's approach to life in general and education in particular divides reality into two groups: us/them, right/wrong, true/false, depending on the issue or subject. The teacher is an Authority and has the job of exuding all that is right and true.

B. Relativism

Every idea has an equal claim to truth. We are all blessed with the right to see the world as we choose. In this phase the students see education as a game of "giving them what they want." Since truth doesn't exist in an absolute sense anyway, the important thing becomes the ability to develop a good story line. Of course, there is hostility, since the students' opinions have as much validity as the instructors', but one can get through by learning to think in a particular way and being sure to take opposing opinions into account.

C. Commitment

Eventually, with our help, students come to see that while there isn't pure duality, there isn't pure relativity either. One needs to hold at least tentative truths that are based on reason and enlightened perception. While he doesn't label it as such, I would suggest that Perry's final stage can be characterized as a critical thinking approach.

ii. Perceptual

An important aspect of critical thinking concerns the individual's active subjective input. Objects are in the world are essentially unknowable. What counts as a particular sort of object results from our synthesis of our perceptions. Objects, as we believe them to be, are never directly perceived. Kant's position makes evident the active role of the perceiver. I realize that Kant's position is debatable, that his "refutation of idealism" lacks the apodictic status that he claimed for it, and that there are other debatable conceptions. I am not suggesting that anyone wade through the Critique of Pure Reason with developmental students, however, and I believe that his perspective is reasonable in application.

Wittgenstein, most evidently in On Certainty, points out the impact of alternative language games on what passes as truth. Students arrive with diverse belief structures from which to view the world. Each of us looks for truth while standing on a particular belief platform. Experiences both influence and are influenced by the individual's particular platform. What counts as something to be noticed can be platform-bound. In any event, a critical thinking class should notice the conceptual, perceptual, and largely subjective impact of language.

iii. Analytical

As Hume pointed out, we lack a direct awareness of cause and effect. Causes are never, strictly speaking, perceived. Correctly understanding causal connections is obviously important, and since our awareness of them is always based on an inference, so is the ability to infer.

In deductive logic I focus on modus ponens and deductive syllogism (process of elimination) inferences. Combined with an understanding of deduction, these provides the deductive backbone of scientific methodology.

Since all scientific truths are ultimately based on induction, they need a general awareness of it and an awareness of arguments by analogy in particular. That "like events will happen under like conditions in the future" requires a through discussion of what should be counted as adequately shared qualities. The impact of additional test data for science corresponds to the shift in probability that occurs when additional premises are provided for an inductive argument. Science proceeds with induction's what-has-been-observed-to what-has-not-been-observed implications.

II. Practical Stuff

i. Developmental Class Suggestions

1. Attempt to determine and perhaps alter the class composition. Watson-Glaser percentiles 8-40 are ideal. I believe that they have to work on some aspects of the course in groups of four or five and other aspects as a class of the whole. Great variations make the latter impossible.

2. I use the Chaffee text as a good source of examples, but have found it impossible to have them understand the concepts from reading it. Some of the concepts are quite abstract and "reading it" tends to mean "have looked closely at the words." You have to model the concepts. Whether they can list the metacognitive terms, a task that they might accomplish from reading the text, isn't the point. They have to be able to enact them with real issues.

3. They begin at basic dualism. Their goal at the outset of the course is to find and write down the right answer. The idea that there might be legitimate alternative perspectives hasn't occurred to them. The idea that they should actively try to discover "truth" rather than merely absorb truth, isn't part of their reality either. They want to be told what they are to believe and then, hopefully, barf it back adequately. In contrast, most Mott students begin in the relativism stage. College for them, though more sophisticated, is just another game. Have them form platforms by working in small groups. Doing so will counter some of their belief in Absolutes.

4. They have to see that the point of completing an assignment consists not in finding the right answer, but in doing a good job in following the steps that it outlines. Following the steps will expose them to the critical thinking process. Stress the steps as the goal of the exercise, not the solution.

5. I have found that the greatest reason for not successfully completing the course lies not in the production of poor work, but in not turning-in any work, poor or otherwise. Hence, have them make the initial completions of the first several assignments during the respective class sessions.

6. I require attendance, sort of. It counts positively towards their grade. I have found that a strict attendance requirement creates a vicious circle that they reason out perfectly. I don't attend. If I don't attend, then I cannot pass. But, if I'm not going to pass, then there's no point in attending, so I don't! Moreover, pointing out that they will likely not pass the class without attending it, isn't real effective. Many developmental students see themselves as failures. Their actions justify failing, which in turn justifies their actions. (Another vicious circle.) Encourage attendance as a positive goal. Every journey is made one step at a time, and the step for the next class meeting date requires being here.

7. To accomplish Piaget's "novel newness," I first develop the principles at issue from events in their lives and then apply them to academic pursuits. For similar reasons, the course proceeds from relatively obvious platform concerns in the "soft" sciences to more obscure platform concerns in the "hard" sciences. Develop perceptual and reasoning abilities with issues from their lives, I have them suggest the topics at least some of the time, and then transfer them to the academic areas.

In the end, parts of this work out better than others. They'll generate hypotheses forever, but have an awful time doing hypothetical reasoning. They'll present alternative perspectives, but they're often tainted. Most developmental students make the climb to relativity, but stop short of commitment.

ii. Example Class Description

Sniff-Sheet Critical Thinking 050

Course text:

Thinking Critically John Chaffee, Houghton Mifflin

In addition, there will be required handouts and you will be expected to view videotapes from various academic disciplines.

When class sizes for critical thinking classes were being discussed, I argued for the necessity of small classes to increase individual contact. I was successful. The maximum number of students for this section is 22. I was serious about wanting to be able to discuss course issues with you. For heaven's sake, take advantage of the office hours.

Attendance and grading policies:

This is a developmental course and, accordingly, will be graded on a 'S' (satisfactory) 'U' (unsatisfactory) basis. Regular attendance will be expected and required.

Attendance

Each session that you attend will earn you one point towards your final grade. While you will be able to miss a few sessions and, given a satisfactory performance on the written assignments, still be able to do well in the class, attendance will count heavily. There are several reasons for this:

1. The textbook will only be used as a supplement, a resource to define and clarify some of the concepts. The course content will be presented in the class sessions, not the textbook.
2. Critical thinking is a skill, not a group of facts to be learned. As with most skills, they cannot be learned by reading about them. They are learned by practicing them. The class sessions are essential for practicing the skills covered in the course. Much as one cannot learn how to swim by reading a book on swimming, one cannot learn critical thinking by reading Chaffee's book (or any other).
3. To be effective, this course must have in class discussions. The person that misses class regularly undermines this essential aspect. Discussions are impossible without people being present. Hence, you have an obligation to attend the classes.

Since the point system does allow for some absenses, there will be no attendance "make-up" policy. Any compensation will have to take place by a lack of further absenses and your completion of the written assignments.

Written Assignments

Of greater consequence from a grading standpoint, you will also have to complete 12 written assignments, each of which being of a paragraph or so in length. They will require you to exhibit the critical thinking skills that we're working on in this portion of the course. These assignments will be graded on a 'S' and 'R' basis, 'R' indicates that the assignment should be redone. Any assignment can be redone any number of times, without penalty, until an 'S' grade is acheived. Each satisfactorily completed assignment will add five (5) points to your total for the semester.

Grade Determination

Your final grade will be based on the number of points that you have received over the semester. 76 points will be required for a satisfactory grade.

Course outline:

Critical thinking seeks to gain an understanding of an issue or problem, rather than a mere memorization of someone else's solution. Critical thinking skills involve both perception and analysis. You have to be able to "see" something in order to do anything meaningful with it. Critical thinking involves being able to "see" something from more than one perspective. In addition, we should strive to be able to do (evaluate and analyze) something with what we "see." What we choose to do with something can be reasonable or unreasonable depending on logic and the situation. This course will look at and try to develop critical perceptual and analytic skills with a focus on their application in other disciplines.

About the first ten weeks of the semester will be devoted to working with critical perceptual skills, while the last five weeks of the semester will work with critical analytical skills.

To say what is obvious, one cannot think critically without thinking critically about something. I have no idea what it would mean to think critically about nothing at all. Portions of the course will have applications to life situations, eg. whether to have an abortion. At the end of each major section of the course, critical thinking skills will be reviewed in terms of some of the other academic disciplines: English, sociology, and chemistry. There will be reading selections from the other disciplines, as well as videotapes of other class sessions, in order to note critical thought processes for the different areas. Since the "soft" and social sciences tend to stress perception while the "hard" and natural sciences tend to stress analysis, we'll take them up in this order.

iii. A More Specific Listing Of Their Assignments

1. Notice the contrast between perceptions and conceptions of an object. Have them work in groups to express their subjective input.
2. Specify a belief framework or "way of seeing the world." The key here is to have them notice that a cluster of basic beliefs are used to consider the world.
3. Notice the impact of perceptions on the belief system. Consider what has caused you to change platforms, what your present platform accomplishes in

terms of making sense of the world, and what it would take to cause you to change it.

4. Language/concept usage as indicating perceptual biases. Have them consider alternative publications. The obvious key here lies in finding alternative publications that discuss an issue with which they are concerned and are written at a reading and cultural literacy level that they can understand.

5. Mapping assignment.

6. Distribution of peotry selections (some included here) and videotaped interpretations. This assignment notes subjective, but not unbridled, aspects of poetry interpretation.

7. Perceptual input in peotry interpretation. Have them notice the input from alternative platforms or language-games.

8. Analysis of suitable evidence for determining causal connections. I use "Teen Pregnancies Involve More Than Sex" from the Chaffee text.

9. Process of elimination arguments - "cannibals and missionaries" (included). The point is to notice and apply the process of elimination reasoning process to other areas.

10. Induction and adequate analogies. Their assignment concerns an evaluation of the evidence for the "canals of Mars."

11. Determine factors that influence the moment of a pendulum. Criticize the in-class experiment.

12. They view a videotape on the origins of life. Their assignment is to discuss the strength of the anatomical argument against creationism.

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